



THE RARA RAG

Newsletter of The Rochester Amateur Radio Association, Inc.
Founded in 1931

FEBRUARY 2019
VOLUME 71, ISSUE 6

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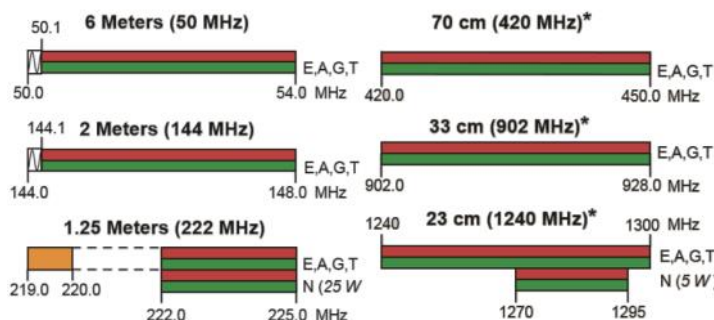
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ALL MODE OPERATION ON VHF AND UHF BANDS

SCOTT THEIS, W2LW, RARA VICE PRESIDENT

During the cold months, we will stay inside and take a look at the world above 50 Mhz. VHF/UHF is open to all amateur radio operators, but did you know that we can use all modes as well? While FM repeater operation is common, we also have access to FM simplex, Single Sideband (SSB), CW, and even digital modes. This presentation will discuss all the commonly used modes on VHF and UHF bands and introduce the types of equipment needed to take advantage of them.

Jarred Jackson, KF2MR, will be sharing information about VHF and take us off the well-beaten path of FM repeater operating into many other operating opportunities and modes.



Courtesy ARRL

Typical bands used are 6m, 2m and 70cm, but there are many other bands that can be accessed. He will talk about various types of VHF propagation, busting the line of sight myth and providing tips. Aside from FM, Jarred will also dive into SSB, CW and Non-voice digital modes while looking at some transceivers and various antenna options. He will also discuss transverters.



Courtesy VK1AD

Finding activity and common frequencies will be covered along with nets, internet-based tools and contests.

Jarred Jackson, KF2MR is the Chairman of the Rochester VHF Group. While he occasionally gets on HF, he spends most of his time operating above 50 MHz, pushing the limits of what is possible on the VHF, UHF, and Microwave Bands. He enjoys building equipment, mobile contesting, and experimenting.

Please join us on Wednesday, February 6th, 2019, 7:00PM at the Boy Scouts Headquarters at 2320 Brighton Henrietta Townline Road, Rochester, New York 14623.

RARA





Saturday February 9, 2019, 11:30AM
Stewart Lodge, Mendon Ponds Park



BOARDZ BUZZ

TIM BARRETT, K9VB, RARA MEMBERSHIP SECRETARY

One of the great benefits of amateur radio as a hobby is that there are always new challenges and new activities to explore. So recently I took up an 'old' challenge of finally getting on the air with CW. I regularly use SSB and sometimes digital modes but never quite got to using Morse code. Help and encouragement has come in the form of the [RXCWG](#), the CW group set up by members of RARA and XARC.

It turns out that making your first CW QSO is quite scary but not as difficult as I expected. For a newbie to CW at least it is quite different to other modes. First you really have to concentrate to find when you can respond to a call – no idly listening in the background until two stations finish a QSO and jumping in, you have to listen! I found I needed to sit attentively pencil in hand writing down what I heard. Secondly I discovered power is much less important, as I'd been told. Even with my basic antenna setup (ancient Butternut HF6V vertical) contacts are much easier than with SSB. Thirdly nulling out interference is much easier. In fact I'd always considered the digital audio processing on my rig to be more or less useless (It's quite old). By the time I have removed the interference the audio is usually distorted to the point of being unintelligible. Not so with Morse code, as long as I can hear it (and as long as it is very slow!) I have a chance of understanding it.

But the most fun part is that it is like dropping into a different world of sounds and slower conversations. If you are already a CW operator you know this. If not, take a look at the [RXCWG](#) page and consider joining us! I'm looking forward to getting more fluent in this new language!

Membership

As Membership Secretary I can report that membership is looking healthy, currently standing at over 450 members with some members still to renew for the 2019 season. If you are one of them, take a few minutes to renew at [our renewal page](#) - you can use a credit card (you don't need to be a PayPal member) or print a document to send with your check.

Brian KA2CGB reported last month that we have recently obtained a professional card printer. We are still in the process of testing and have created a few sample cards but hope to go into production soon, I'll provide further information when we are ready to deal with the backlog of recent members who have not yet received a card.

RARA Website

Have you visited the [RARA Website](#) recently? I'd like to take this opportunity to thank our webmaster Scott Theis W2LW for the great job he does maintaining it and keeping it up to date. I especially like the frequent updates on the home page of items of interest and news. In case you have missed these, Scott has recently added a page of [Past 'Headlines' and 'Of Interest' items](#). I guarantee

if you look there you will find several things of interest and while away some time reading about them! And of course if you see something that might interest other RARA members let Scott know and he can include it in the links on the home page.

Winterfest

There is a posting further down about the Winterfest. The club's FT-450 and Omni-V rigs will both be there and special consideration will be made to get new operators on HF - no experience necessary. If you are free on Feb 9th please come along. It is always a fun event, and the Stewart Lodge is heated!

See you at the Winterfest!!

CALENDAR OF EVENTS

WEDNESDAY FEBRUARY 6, 2019 - RARA General Meeting
7:00 PM at BSA Headquarters
2320 Brighton Henrietta Town Line Rd

Thursday February 7, 2019 - RARA Board of Directors
5:45 PM at Novaworks, 333 Metro Park, F-500

SATURDAY FEBRUARY 9, 2019 - WINTERFEST
11:30 AM Stewart Lodge—Mendon Ponds Park

Saturday February 16, 2019 - RARA VE Testing
9:45 AM RIT Kate Gleason College of Engineering, Room 9-3139

SATURDAY JUNE 1, 2019 - ROCHESTER HAMFEST 2019

Rochester Hamfest 2019

HELLO FROM THE 2019 ROCHESTER HAMFEST COMMITTEE!

I'm pleased to announce that two members stepped forward to be on the committee. Thanks Dave Mitchell (KD2RAF) and George Lama (KC2OXJ)! Returning from last year are Mike Moore (KC2NM) and myself Tim Guyot (KB1POP).

The Hamfest committee has had our first team meeting, and work is already underway. As you know, we've signed for the same location as last year for this year's event:

- June 1st 7am-2pm
- Hilton Exempt Club
- 137 South Avenue
- Hilton, NY 14468

Forest Shick (WA2MZG) has already started securing raffle prizes, and we have our approval from the ARRL.

<http://www.arrl.org/hamfests/rochester-hamfest-2019>

Watch future RAGs and <https://www.rochesterham.org/hamfest.htm> for updates.



THE RARA RAG



FEBRUARY 2019

PUBLIC SERVICE UPDATE

MIKE MOORE, KC2NM, PUBLIC SERVICE COORDINATOR

Planning has started for the 2019 RARA Public Service Events. This month I would like to introduce each of the events and hope that you will find one or more events that you would like to be a part of. For more information or to volunteer to participate in an event look at the [Public Service page at rochesterham.org](http://PublicServicePageatRochesterHam.org)

Our first event of the year is the **Tour de Cure** which benefits the American Diabetes Association. The Rochester tour is the largest event of its kind in the USA. Our tour involves over 1000 participants and for the last two years has raised over \$1,000,000 that is used to find a cure for diabetes, education to prevent diabetes, and to support those people who suffer from the disease. This day-long event is made up of bike rides of various lengths. Individual and teams of riders raise donations from friends and family for completion of the rides. RARA provides communications on the ride course in support of the riders using mobile radios, repeaters, APRS, and cell phones where needed. We operate the communications command center, coordinating the delivery of services, and updating the event managers. Tour de Cure is a big operation and involves hams from Monroe, Ontario, and Wayne counties. There are 100, 65, 40, and 15-mile bike rides as well as a 3-mile walk. The courses all start at the Xerox campus in Webster and extend east as far as Chimney Bluffs State Park.

Bike MS - ROC the Ride is a bike ride similar to the Tour de Cure except that it supports the Multiple Sclerosis Society. The rides start and end in Genesee Valley Park and the routes extend to the south with lengths of 100, 63, and 30 miles. We have a command post set up in a park shelter and communicate with SAG and Sweep vehicles equipped with Amateur Radio.

The **Fairport Lift Bridge Regatta** is held on the Erie Canal in Fairport. RARA provides communications support for rowing shell races and this operation stations hams at various locations along the course to report race progress and provide information relative to safety on the course. Most of the communications use handheld radios on simplex frequencies. The regatta participants are mostly high school aged and they are there with their families. It provides an opportunity to showcase Amateur Radio to the public.

Pumpkin Patrol is our longest running public service event. It is a state-wide event and RARA in Monroe County is just one part of something which spans the entire NYS Thruway. Each pair of riders in a vehicle equipped with mobile Amateur Radio is assigned watch on one of the 16 Thruway bridges in Monroe County. A net is run between sundown and midnight with status reports provided every half hour to report any untoward activity on the bridges. This operation is done in service of the NYS Troopers where we become their "eyes and ears" on Halloween night and the night before. Our presence prevents acts of vandalism and frees up law enforcement resources for more valuable use.



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The **RMSC Holiday Science and Technology Days** are held in December at the Rochester Museum and Science Center. This program is provided jointly with RDXA. RDXA demonstrates an HF phone station and RARA members demonstrate STEM experiments. The purpose is to present Amateur Radio to the public and interest young people to pursue career paths in the STEM Fields.

The schedule of the public services events is given in the table below.

Event Name	Location	Day	Date
Tour de Cure	Xerox Campus Webster	Saturday	June 8, 2019
Bike MS: ROC the Ride	Genesee Valley Park - Rochester, NY	Saturday	August 24, 2019
Fairport Lift Bridge	Erie Canal – Fairport, NY	Saturday	Sept. 28,
Pumpkin Patrol	Overpasses of the New York State Thruway	Wednesday & Thursday	Oct. 30-31, 2019
Holiday Science &	Rochester Museum &	Saturday	TBD
Public Service Events for 2019			

EDUCATION

TIM BROWN, WB2PAY, EDUCATION COORDINATOR

THE ELMERS CORNER

At each RARA General meeting, there will be an ELMER available from 6:15PM to 6:45PM to answer questions and assist with technical advice.

As Education Coordinator, I've been approached during meeting breaks with questions that could not be answered completely with the time available.

To do justice to your questions, we will devote 30 minutes prior to the beginning of the meeting to give your questions the attention they deserve.



RARA's ELMERS will help you with your questions. If the ELMERS do not have the answer, they will get back to you with the information.

LICENSE CLASSES — WINTER/SPRING 2019

Amateur Technician, General and Extra Licensing classes will be held Tuesday evenings 7pm-9:30pm beginning February 26, 2019.

Classes run for 10 weeks with FREE testing on the 11th week. Classes are held at RIT in the Gleason Engineering building, room numbers to be determined (watch the website for additional information on location).

Licensing courses are FREE to current members and only \$15.00 for non-members.

Not a current RARA member?

Membership starts at FREE!

<https://www.rochesterham.org/membership.htm>

Lincon Web

CLUBS

[New Jersey QRP Club](#)
[North Georgia QRP Club](#)
[Space Coast QRP Group](#)
[Midwest HB and QRP Group](#)

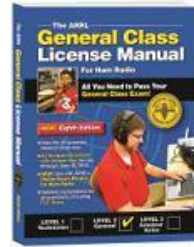
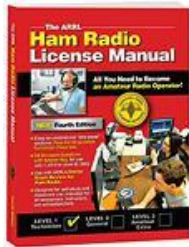
SATELLITES

[FUNcube Dongle](#)
[ARISS](#)
[Gunter's Space Page](#)
[Photographing Satellites](#)

CW

[Straight Key Century Club](#)
[The Long Island CW Club](#)
[CWops](#)
[CW Operators QRP Club](#)

ARRL Licensing manuals may be purchased the first night of class for the discounted rate of \$25.00. Please make checks payable to RARA or have exact cash amount.



In order to have sufficient License Manuals and to keep you updated on any schedule changes, please pre-register at <mailto:education@rochesterham.org>

RARA ACADEMY WORKSHOPS

PLEASE NOTE NEW LOCATIONS

Academy Training Workshops will be held at community meeting locations around Monroe county.

FEBRUARY — ANTENNAS February 23rd, 2019 (10am-Noon)

Session will be held at the Ogden Public Library, 269 Ogden Center Road @ Rt. 259, Spencerport, NY 14459.

Topics:

- Antenna Fundamentals
- Horizontal vs. Vertical Polarization
- NVIS vs. DX Antennas
- Antenna Supports and Hardware
- Feeding and Nurturing of an Antenna
- Baluns and Transmatch
- Grounds and Counterpoise
- Restricted Space and Stealth Antennas
- The UGLY HOA Dilemma

This Session will be hosted by Mike Sanchez, KM2B of RDXA, and Tim Brown, WB2PAY of RARA.

MARCH — ELECTRONIC COMPONENTS March 9th, 2019(10am-Noon)

Session will be held at the Pittsford Community Center, 35 Lincoln Avenue, Room 19, Pittsford, NY 14534.

For the March Academy we will have a jam-packed discussion of the basic properties of common electronic components. The goal is to give participants a basic understanding of common parts for kit building and basic repair.

We will cover the basic components, their characteristics, schematics symbols, uses, how to read them and how to test some of them. Types will include:

- Passive Components such as: resistors, capacitors, inductors, diodes, relays, lamps and indicators, wire gauges & ratings, connectors etc.
- Active Components such as: transistors, ICs, tubes, opto-couplers etc.
- Assemblies and Modules, such as: displays, controllers, RF modules, etc.
- Basic Testing of Components

This Session will be hosted by Scott Theis, W2LW.

Latest Academy information is available at https://www.rochesterham.org/rara_academy.htm

Academy Workshops are FREE and held from 10am to noon at Community Meeting Rooms throughout the county.

Sign up for Academy Workshops by emailing

<mailto:education@rochesterham.org>

Please take advantage of these RARA sponsored training and operating opportunities.

FEBRUARY RAFFLE

February Raffle prizes are pictured below:

- RIGrunner 4005
- Shortwave Receivers Past and Present
- LED Work Light

Coming in March
Inline DC Multimeter



CODE PRACTICE OSCILLATOR—REVISITED

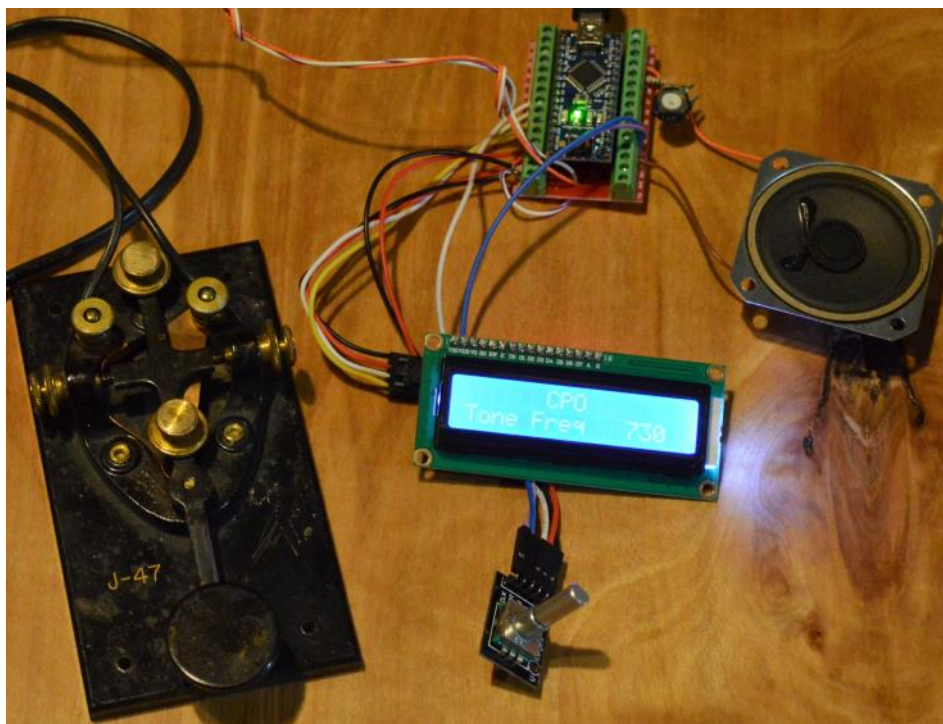
FOREST SHICK, WA2MZG

Last month I described a simple circuit and software for a Code Practice Oscillator based on the Arduino Nano. As I mentioned then, it is slightly better than a blinking LED. This month let's expand the hardware by adding a Liquid Crystal Display and a rotary encoder and of course, the software to support these 2 devices.

If you are hoping this will be a lesson in programming, this article is too short and there are many resources on the web to help you with both the Arduino and C programming. Here are a few useful links.

Arduino: <https://www.arduino.cc/reference/en/>

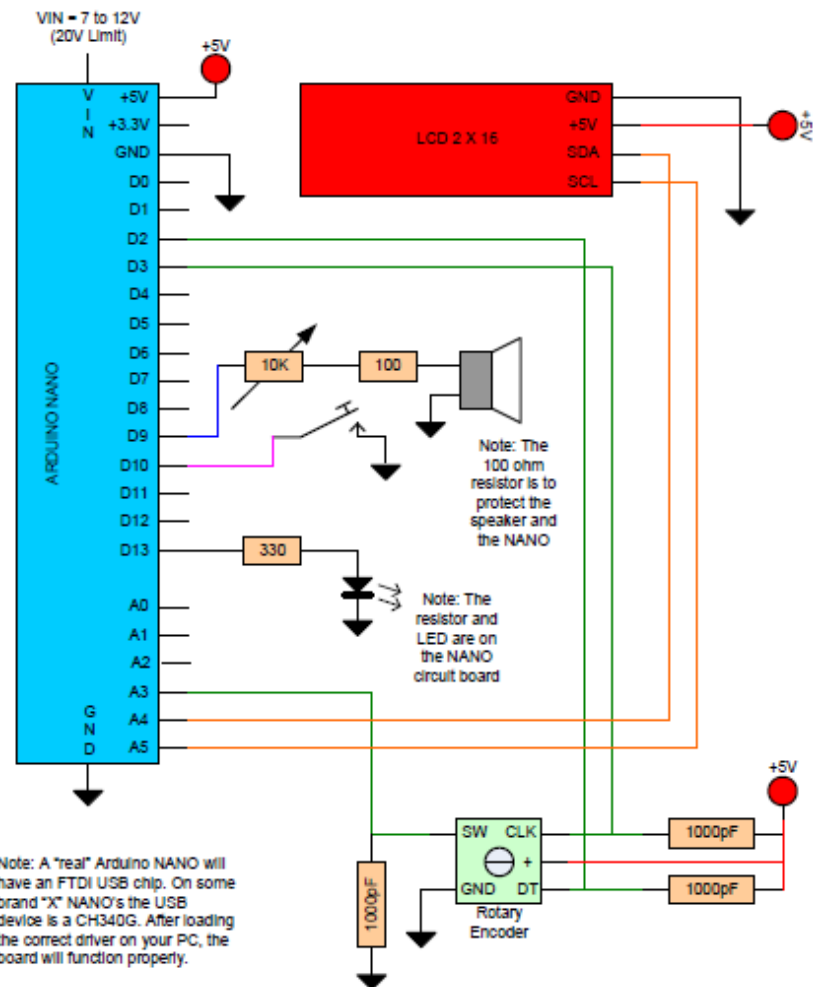
C Programming: <https://www.tutorialspoint.com/cprogramming/>
<https://www.cprogramming.com/tutorial/c-tutorial.html>



Complete Code Practice Oscillator Breadboard

The picture shows the complete breadboard for the CPO. The LCD and rotary encoder are in the center of the picture.

Here is the schematic of the CPO with the rotary encoder and LCD added.



Notice there are capacitors added to 3 of the terminals on the rotary encoder. These were added to minimize contact bounce as the encoder knob is rotated or pressed.

Liquid Crystal Display

The LCD is a 2 line by 16 character per line alphanumeric display – it will display letters, numbers and characters. The LCD I used for this project is available from [YourDuino](#).

The Nano communicates with the LCD using an IIC (I2C) interface. This is a bidirectional 2 wire digital communication path. Here is a link to an application note describing the [IIC interface](#).

The firmware to use the IIC interface and LCD are all found in the file "[LiquidCrystal_I2C.h](#)". You must add this file to your project.

Rotary Encoder

The Rotary Encoder is a device that operates similar to a potentiometer. Instead of a resistance change as you turn the knob, there are pulse outputs indicating rotation direction: CW or CCW. Counting the pulses tells the software how far and in which direction the knob has been turned. This device also has a pushbutton switch – simply press the control knob for switch activation.

The firmware to use this device is found in the file "[Rotary.h](#)". I purchased the [Rotary Encoder](#) on eBay.

You must add both of the described ".h" files to your project. Using the Arduino IDE (Integrated Development Environment) select the menu item, *Sketch / Include Library / Add.ZIP Library*. Check the Help menu item for more detailed information on this process.

To demonstrate the LCD and rotary encoder, I have added more code to the CPO firmware from last month.

The additional code displays the frequency of the CPO tone on the LCD, then allows the tone to be changed using the rotary encoder.

Pressing the rotary encoder knob will display a blinking cursor on the LCD next to the tone frequency.



When the blinking cursor is present, rotating the rotary encoder will change the frequency of the CPO tone from 300 to 3000Hz in 10Hz steps. You may listen to the tone by pressing the key down while changing the frequency.

Pressing the rotary encoder knob again will turn off the blinking cursor. Now, if you rotate the knob, the frequency will not change.

With this simple example, you can experiment with and develop your own station accessory. By adding a second key input you could attach a paddle for an iambic keyer. Adding a resistor and transistor you would be able to key your transmitter. Of course it doesn't happen without writing more firmware / C code.

Things to try:

- Change the frequency increment to 100Hz
- Disable the CPO function while the cursor is blinking
- Where would you add code to turn on and off a transistor to key your transmitter?

- Modifying the code to make an iambic keyer is a bit more difficult—but it is only software—you don't need a soldering iron!

This is the code for this project.

```
/* This file has the CPO and adds an LCD and Rotary encoder */
```

```
#include <Rotary.h>
#include <LiquidCrystal_I2C.h>

// Pin use definitions
#define LED 13 // The LED is on the NANO and connected to D13
#define KeyIn 10 // This is the Straight Key input
// Tone is generated on D9 and connected to the speaker

// Set pins for ROTARY ENCODER
#define RotEncSwPin A3 // PB switch of the RE.
Rotary r = Rotary(2, 3); // Create RE object. RE uses D2 & D3.

// Variables for Rotary Encoder handling
boolean RotEncSw = HIGH, LastEncSw = HIGH;
volatile char cRotChng = 0; // RE has changed, in the interrupt
volatile char cSwChng = 0; // PB switch changed in the interrupt

// Display library assumes use of A4 for clock, A5 for data.
LiquidCrystal_I2C lcd(0x27, 16, 2);
//Create LCD object. Set I2C address 0x27
// also try address 0x3F if you are having trouble

char sLine1[16], sTemp[8]; // Display lines
boolean bCursor = false; // Cursor on / off
int iFreq = 750; // Tone frequency for the CPO

void setup() // Initialize the pins
{ // Set up CW pins
  pinMode(KeyIn, INPUT_PULLUP); //Make D10 an input with a pullup resistor
  pinMode(LED, OUTPUT); // Make D13 an output
  digitalWrite(LED, LOW); // Set D13 LOW

  // Set up LCD
  lcd.begin(); // initialize the lcd for 16 chars 2 lines
  lcd.setCursor(0,0);
  lcd.print(" Code Practice ");
  lcd.setCursor(0, 1);
  lcd.print(" Oscillator ");
  delay(3000);
  lcd.setCursor(0,0);
  lcd.print(" CPO ");
  lcd.setCursor(0, 1);
  lcd.print("Tone Freq 750 ");

  // Set up ROTARY ENCODER
```

```

pinMode(RotEncSwPin, INPUT_PULLUP);
PCICR |= (1 << PCIE2) | (1 << PCIE1); // Interrupt service code
PCMSK2 |= (1 << PCINT18) | (1 << PCINT19); // Rotary encoder
PCMSK1 |= (1 << PCINT11); // Rotary encoder switch
sei(); // enable interrupts
}

void loop() // This is the main part of the program
{
    if(cRotChng != DIR_NONE) // Has the rotary encoder moved?
        ReadRotary();
    if(cSwChng == 1)
        ReadPBS(); // Read the rotary encoder switch
    CPO();
}

// Code Practice Oscillator
void CPO()
{
    // Read Straight Key and Set or Clear the LED
    if(digitalRead(KeyIn) == LOW) // if the key is pressed
    {
        digitalWrite(LED, HIGH); // turn the LED on
        tone(9,iFreq); // put a tone on D9 to the speaker
    }
    else // if the key is not pressed
    {
        digitalWrite(LED, LOW); // turn off the LED
        noTone(9); // turn off the tone
    }
}

// Write 16 new characters to Line 1
void UpdateLine1()
{
    strcpy(sLine1, "Tone Freq ");
    sprintf(sTemp, "%d", iFreq);
    if(strlen(sTemp) < 4)
        strcat(sLine1, " ");
    strcat(sLine1, sTemp);
    lcd.setCursor(0,1);
    lcd.print(sLine1);
    lcd.setCursor(10, 1);
}

// Read the rotary encoder
void ReadRotary()
{
    if((cRotChng == DIR_CW) & (bCursor == true))
    {
        iFreq += 10;
        if(iFreq > 2000)
            iFreq = 2000;
    }
}

```

```

    }
    else if((cRotChng == DIR_CCW) & (bCursor == true))
    {
        iFreq -= 10;
        if(iFreq < 300)
            iFreq = 300;
    }
    cRotChng = DIR_NONE;
    UpdateLine1();
}

// Interrupt service routine for rotary encoder
ISR(PCINT2_vect)
{
    cRotChng = r.process();
}

// Interrupt service routine for rotary encoder switch
ISR(PCINT1_vect)
{
    if(digitalRead(RotEncSwPin) == LOW)
        cSwChng = 1;
    else
        cSwChng = 0;
}

// Rotary Encoder Switch processing, Cursor on / off
void ReadPBS()
{
    if(bCursor == true)
    {
        lcd.noBlink();
        bCursor = false;
    }
    else // bCursor == false
    {
        lcd.setCursor(10, 1);
        lcd.blink();
        bCursor = true;
    }
    cSwChng = 0;
}

```


DONATIONS

We would like to thank Milt Levis N2JDN for his generous donation of \$100 in memory of John E Levis.

We received a donation of old magazines from the estate of Bill Hickok, K2EEN.

RARA WINTERFEST 2019 **SATURDAY FEB 9TH**

TIM BARRETT, K9VB, RARA MEMBERSHIP SECRETARY

Our ninth annual RARA Winterfest is right around the corner! As always, we will have our very popular crockpot cook-off and everyone is invited to bring their favorite creation to share. You are encouraged to bring anything you can make in a crockpot. We anticipate seeing, and eating all sorts of soups, chili, casseroles, lasagna, pizza, stew and who knows what else. As before, we will be awarding prizes of RARA membership points to the top three entrants.

We are also inviting everyone to bring a dessert to share. In fact we are so excited about dessert that we will be judging dessert creations and awarding more RARA membership points for the best dessert. Desserts do not need to be made in a crockpot but if you can do that, go for it. We encourage you to put on your chefs' hats and wow us with your sweet culinary creativity. Of course, there is no entry fee for these cook-offs so simply sharing the wonderful delicacies will make everyone a winner.

As always we encourage you to bring radios and antennas so we can operate and have fun. During the past several Winterfests we have had visitors who were interested in becoming hams. Active operating positions are a great way to introduce them to the hobby and encourage them to become hams themselves. Of course, if you know anyone who would like to learn more about our wonderful hobby please invite them to join us. We will be there around 10:00 am to set up radios and antennas and anyone willing to help is welcome to join us.

We are looking for one or two volunteers to help us set up food and tables so if you can do that please email Tim.K9VB@gmail.com to let us know.

We encourage everyone else to plan to get there around 11:30 AM when the eating and operating will begin. RARA will provide non-alcoholic beverages along with all the necessary paper products that will be needed to enjoy the great food we will certainly have. I'll look forward to seeing everyone there. The 'fest will be held on Saturday February 9th at the Stewart Lodge in Mendon Ponds Park. The lodge has heat, a fireplace, it is located near the bathrooms and there is plenty of parking. You can find a map [here](#).

Hoping to see you on the 9th and you may be one of the lucky ones to win one of our door prizes!

Silent Key

Thomas J. Zillioux
N2TOC
January 10, 2019

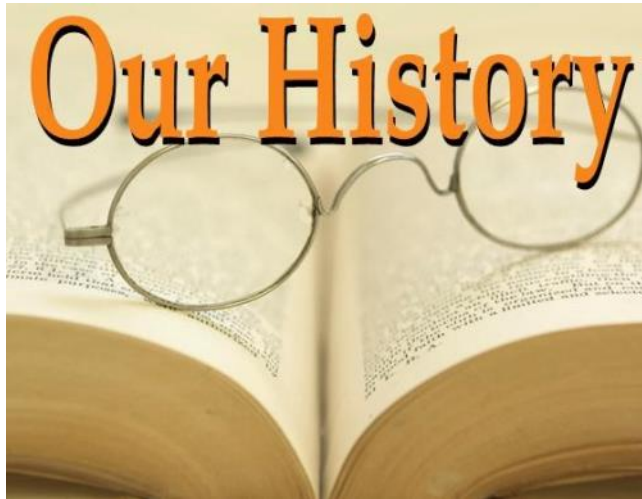
RAGS OF THE PAST

ED GABLE, K2MP, RARA HISTORIAN



40 Years Ago, February 1979

The February meeting offered two for the price of one programs for your enjoyment. The first found popular technical speaker Joe Hood, K2YA, sharing information on the use of microprocessors within ham radio. That was followed by a film presented by the Finger Lakes Region of the Sports Car Club of America revealing the exciting sport of Road Rallying. The SCCA would like to invite local Amateurs to help out a growing list of communicators for the Susquehannock Trail Pro Rally held in Wellsboro, PA. Howie Kingsford WA2UEB, Chairman of RARA's Valentines Day Dinner Dance invited members to attend this popular annual event held this year at the Airport Holiday Inn. Ed Holdsworth, N2EH, encouraged everyone to spread the word on the next Spring session of the code and theory classes. The lessons this year would cost seven dollars including all books and materials. The Rochester VHF Group, celebrating 30 years of continuous activity, announced the reinstatement of their Worked All Rochester (WAR) award. You could contact Tom Richmond WB2IEY, for details on how to apply. Other VHF news found Fred Reynolds W2GV, rigging up his amateur equipment to receive WX maps via FAX reception. At the same time, Paul Jacobs W2IOG, invited QRP enthusiasts to join his 1 milliwatt activities on the low end of two meters. Speaking on the wonders of amateur radio were Joe Hood K2YA and Len Gessin WA2ZNC, who found themselves talking on a mode not normal for themselves, AM. This time on WROC radio and guests of the Toby Gold program. With pride, it was announced that Mike Marero WA2ILI, was nominated to the U.S. Military Academy at West Point. Mike, an Eagle Scout, was introduced to ham radio by Ash Palmer K2EAW. From the Want Ads you could buy a Standard model 146A hand held radio from Chuck Bliss WB2KIO. MetroComm, (Gary W2TR, Jim WB2ITL and Mike WB2HYP proprietors) remained a long term commercial advertiser.



20 Years Ago, February 1999

The kick off meeting for 1999, was by local digital experts who were also early into the game, Mr. Jack Tripp N2SNL and Warren Boudrie AA2LQ, who spoke on the Automatic Packet Reporting System (APRS.) Their talk also introduced the addition of GPS into the system thus introducing the concept of vehicle tracking systems. At this time meetings were at 8:00 p.m. with the Henrietta Fire Hall the venue. RARA Licensing Class Director Tim Magee WB2KAO, reported a successful conclusion of the Fall classes with a large group of new licensees and numerous upgrades finishing the latest class sessions. Spring classes were announced as beginning February 20th with a full slate of Novice through Extra class offerings as well as CW teachings. Rick Wells W2RW, RARA President, in his monthly "The Prez Sez..." column made a special effort to recognize and thank Tim MaGee, WB2KAO, and his code and theory class crew for their success and contribution to RARA and the Amateur community. Rick's article continued with what could be called a year end report with details on other accomplishments in the area of Public Relations led by Keith Freeberg N2BEL, Emergency Communications and the K2JD Club station with Ed Holdsworth N2EH and a special recognition of Bob Moore N2USB, noting his dedication to Technical Advancement of RARA through his selection of programming and technical topics. A surprise article, even to this author, was finding a new column titled "DX Happenings" by some guy calling himself Ed Gable K2MP. I forgot all about that and can't wait 'til next month to see if the Editor kept part 2 off the editing room floor. Stay tuned. This issue also found a new column titled "Reflections" where you, the average RARA member on the street, could write about your journey through ham radio. This initial writing, by Ray Mattice, Sr. WA2UFV, AA2SH and now K2PWJ, told of his going through the licensing chairs and ending up dedicating his ham career to his Dad by obtaining his original K2PWJ callsign. Nicely done. Within these pages you would also find RARA's initial announcement of a new and exciting program called "The Radio Coaches." Come back for more. There were no Want Ads within but a new commercial advertiser was Kitt Diebold N2NNJ, offering Internet Access services via Connecticon, Inc.

VE TEAM

The next **ALWAYS FREE** testing session:
 Saturday February 16th (Third Saturday)
 Rochester Institute of Technology
 Kate Gleason College of Engineering
 Gleason School of Engineering
 Room 3139, Bldg. 9
 Use "J" parking lot

Registration at 9:45AM
 Testing at 10:00AM

You do not have to preregister.

To avoid giving your SSN go to:
<http://wireless.fcc.gov/uls/index.htm?job=home>
 Register and bring the resultant FRN.

For more info:
<https://www.laurelvec.com/?team=RARA>

Don Kiser - AC2EV
 RARA Board member
 VE Team Leader
 585-613-1035

CW ELMERS

Name	Call	Area	Email
Ned Asam	W2NED	Pittsford	w2ned@frontiernet.net
Tim Brown	WB2PAY	Ogden	tjbrown@rochester.rr.com
Pete Fournia	W2SKY	Penfield	pfournia@gmail.com
Bill Hopkins	AA2YV	Brighton	whopkin4@naz.edu
Bob Karz	K2OID	Webster	rkarz@rochester.rr.com
Larry Lavery	WW2J	Fairport	ww2j@arrl.net
Joe Rowe	AG2Y	Webster	ag2y@rochester.rr.com

GOVERNMENT SHUT DOWN

New licensees names are in BOLD

RADIO ELMERS

Name	Call	Area	Email
Tim Brown	WB2PAY	Ogden	tjbrown@rochester.rr.com
Dave Carlson	N2OA	Batavia	kdcarlso@gmail.com
Lawrence Hill	N2AJX	Henrietta	lawrence.hill@rit.edu
Bill Kasperkoski	WB2SXY	Pittsford	wb2sxy@arrl.net
Don Kiser	AC2EV	N Greece	dkiser100@gmail.com
Karl Heinz Kremer	K5KHK	Chili	k5khk@khk.net
Tim Magee	WB2KAO	Greece	585-704-5747
Peter Schuch	WB2UAQ	Perinton	pschuch@rochester.rr.com
Forest Shick	WA2MZG	Webster	fshick3@gmail.com
Dave Timmons	W2DST	N Greece	dstimmons@gmail.com
Dan Waterstraat	W2DEW	Henrietta	higreen@rochester.rr.com

RARA CALENDAR

TIM BARRETT, K9VB, MEMBERSHIP SECRETARY

February 2019						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2 AWA Museum Open 1pm - 5pm VT, MN, BC QSO Parties 10-10 Int Winter Contest SSB F9AA Cup CW FYBO QRP Sprint AGCW Straight Key Party FISTS Slow Speed Sprint
3 VT, BC QSO Parties 10-10 Int Winter Contest SSB F9AA Cup CW Mexico RTTY Contest North American CW Sprint	4 RSGB 80M Club Championship, SSB ARS Spartan Sprint	5 QRP Fox Hunt Phone Fray CWops Mini-CWT Test	6 RaRa Monthly Mtg 7:00pm, BSA HQ, Brighton Henrietta TLR ROC City Net 8:00pm 3.826 MHz KD2OJV Modulated CW Net 8pm 444.850MHz UKEICC 80m Contest	7 RaRa BoD Meeting 5:45pm Nova- works 333 Metro Park Rochester 14623 ARES Net 146.61 MHz 7pm NRAU 10m Activity Contest NCCC RTTY Sprint QRP Fox Hunt	8	9 RARA Winterfest Stewart Lodge Mendon Ponds Park AWA Museum Open 1pm - 5pm CQ WW RTTY WPX Contest SARL Field Day Asia-Pacific Sprint, CW Dutch PACC Contest SKCC, FISTS Sprints YLRL RL-OM Contest OMISS QSO Party RSGB Topband Contest
10 CQ WW RTTY WPX Contest SARL Field Day Dutch PACC Contest SKCC Sprintathon YLRL RL-OM Contest OMISS QSO Party	11 ARRL School Club Roundup	12 ARRL School Club Roundup NAQCC CW Sprint QRP Fox Hunt Phone Fray CWops Mini-CWT Test	13 ARRL School Club Roundup ROC City Net 8:00pm 3.826 MHz SIARC 7.30pm KD2OJV Modulated CW Net 8pm 444.850MHz RSGB 80M Club Champ, Data	14 ARRL School Club Roundup ARES Net 146.61 MHz 7pm NCCC RTTY Sprint QRP Fox Hunt	15 ARRL School Club Roundup	16 AWA Museum Open 1pm - 5pm ARRL Int DX Contest, CW SARL Youth Day Sprint Russian PSK WW Contest AWA AM QSO Party
17 ARRL Int DX Contest, CW Russian PSK WW Contest Feld Hell Sprint AWA AM QSO Party Run for the Bacon QRP Con- test	18	19 RDXA 7.30pm Monroe Cty EOC QRP Fox Hunt Phone Fray CWops Mini-CWT Test	20 ROC City Net 8:00pm 3.826 MHz KD2OJV Modulated CW Net 8pm 444.850MHz	21 ARES Net 146.61 MHz 7pm NCCC RTTY Sprint QRP Fox Hunt AGCW Semi-Auto Key Evening	22 CQ 160M Contest, SSB	23 AWA Museum Open 1pm - 5pm CQ 160M Contest, SSB UBA DX Contest, CW SC, NC QSO Parties NA Collegiate Champ, RTTY NA QSO Party, RTTY
24 CQ 160M Contest, SSB UBA DX Contest, CW SC, NC QSO Parties NA Collegiate Champ, RTTY NA QSO Party, RTTY High Speed CW Contest	25 Classic Exchange, Phone	26 QRP Fox Hunt Phone Fray CWops Mini-CWT Test Classic Exchange, Phone	27 ROC City Net 8:00pm 3.826 MHz KD2OJV Modulated CW Net 8pm 444.850MHz Classic Exchange, Phone	28 Monroe Cty ARES 6pm, Red Cross Center, Prince St NCCC RTTY Sprint QRP Fox Hunt		

NEWS FROM AREA CLUBS

MONROE COUNTY ARES / RACES News

The Monroe County Amateur Radio Emergency Service, Inc. holds its meetings on the fourth Thursday of each month. Anyone interested, members and non-members, are welcome to attend.

The next ARES Meeting will be held on: **Thursday, February 28, 2019, at 6:00 PM.**

Meetings are held at the **Greater Rochester Chapter of the American Red Cross HQ, 50 Prince Street, Rochester, NY 14607.** (Located behind the Rochester Auditorium Theatre, 885 Main St. E.)

ARES NET: Monroe County ARES/RACES meets on the air every Thursday of the month at 7:00 pm, on the 146.61 MHz (-) 110.9 Hz PL repeater. The only exception to that are nights when we hold our regular meeting, generally on the 4th Thursday of the month.

WEB: www.monroecountymcomm.org

Severe Weather Alerts:

Winter brings severe weather in the form of heavy snow and strong winds. If you experience severe weather, especially when accompanied by damage to property in your area, listen to your local ARES/RACES repeaters for information. While official ARES/RACES activation could be a possibility, it is more important that we open a spontaneous net simply to share information about weather conditions in your immediate area. Don't wait for someone else to do it. Pick up the microphone and start a net. Have each check-in station give you a situational awareness report and emergency power report. If you don't have a copy of the directed net protocol, you can find one at the WEB address listed above. (Activities/ARES Net/ Net Script/ Downloads)

NBEMS: Want to learn about Narrow Band Emergency Messaging System (NBEMS)? It's the latest and easiest way to "Go Digital!" Bring your laptop computer and 2-M handheld transceiver. We will conduct an NBEMS clinic after every meeting through June 2019.



ROCHESTER DX ASSOCIATION, RDXA

RDXA meets the 3rd Tuesday of every month (September through May) except for December, which is the Annual Holiday Banquet. Meetings are open to everyone and all are encouraged to attend. The next meeting is Tuesday February 19, 2019



The February program will be a review and discussion on field day 2019.

Meetings are held at the Monroe County EOC 1190 Scottsville Rd. (second floor), Rochester, NY 14624 at 7:30PM.

ROCHESTER RADIO REPEATER ASSOCIATION

The Rochester Radio Repeater Association, RRRA invites you to attend its February 15th 2019 meeting. Meetings are held on the 3rd Friday of the month in the Pittsford Town Hall Basement starting at 7:30 pm. We are having someone from R. E. Ginna Nuclear Power Plant in to talk about the plant and how hams help in nuclear emergencies. The plant is run by the Exelon Company and is located in Ontario, NY.

Starting in January the Board decided to give away unused door prizes from our past hamfests. One prize will be given away to someone attending each month until they are all gone. February's prize is going to be something special, a MFJ 24 hour wall clock so plan to attend.

The RRRA current officers are Bob Odell, N2BZX President, Bob Shewell, N2HJD Vice President / Technical Chairman, ED Wilkonski, K1EM Secretary, and Bob Smith, NS2B Treasurer / Membership Chairman. RRRA also accepts donations to the club. If you are not currently a member and want to support RRRA, you can join at our monthly meeting or on our web site www.k2rra.org

ROCHESTER VHF GROUP

The Rochester VHF Group sponsors an informal On-Air Net every Monday at 2100 local time on 144.260 MHz USB and a 6 Meter Net every Thursday at 2100 local on 50.200 MHz USB.

More club information can be found by visiting www.rvhfg.org or just calling in any Monday or Thursday night. All are welcome to check in to these nets.

XRX AMATEUR RADIO CLUB

The XRX Amateur Radio Club will have their next meeting at 6PM on Thursday February 14th at the Webster Recreation Center. Look for details on our website <http://xarc.us>

AMATEUR RADIO ASSOCIATION OF THE SOUTHERN TIER, ARAST

ARAST meets the third Thursday of every month at the Town and Country Fire Department on Gardner Rd in Horseheads New York. Chemung County ARES (CCARES) meets the first Tuesday of the month except February at Harris Hill. See www.ccares.info for details. CCARES covers the entire area in Chemung, Schuyler and Steuben counties and all are welcome.

There will be a CCARES meeting in February weather permitting. There will undoubtedly be a discussion about the winter field days event that was held in January.

ARAST holds elections in March so nominations are due this month for Board of Directors for one third of the Board.

Communicators are needed to help out with the 2019 Wineglass Marathon (one week following the Hamfest). If you would like to help out, contact the emergency coordinator: emergencycoordinator@stny.rr.com.

2019 Hamfest will be the last Saturday of September 2019. Stay tuned for details.

Our website is still under construction. It is anticipated that construction will continue well into the new year. Until that is finished check us out at www.arast.info.

Don't forget to check out our repeaters when you visit the area. The N3AQ 147.36(+) and the 146.70(-) are the principal 2 meter repeaters. Also, Echolink is available using the call sign KA2BED-R. Check it out. A full list of available repeaters that can be heard in the twin tiers area surrounding Chemung County can be found at www.arst.info/arast_website/public/repeaters.php.

COMMUNITY AMATEUR RADIO CLUB, CARC

If you are interested in being a part of this forward thinking and active club, visit us at a meeting or join us on one of our weekly nets. We meet at the Hoag Library (134 S. Main St. Albion, NY) on the first Saturday of each month at 7PM. Each meeting has a brief training/refresher period with upcoming topics including: net protocol, repeater set-up/maintenance, and digital signaling. The club holds a net every Sunday evening at 8pm (winter) and 9PM (summer) - 0100 UTC Monday - on 147.585 simplex, and we host the Thursday Night Social Net, Thursday at 8:30PM on 147.285+. We'd love to hear you check-in! Take a look at the club website for more info: www.k2srv.org

DIGITAL COMMUNICATIONS ASSOCIATION OF PERINTON, DCAP

DCAP members continue to experiment with leading edge digital communications modes. We were formed in 1994 to foster the development of local and regional packet radio networks using AX25 and TCP/IP. Today we have members using the club sponsored DSTAR repeater (KB2VZS on 444.8MHz), several personal and public [DSTAR hotspots](#) (using the dvrptr board), Yaesu fusion systems on non-club repeaters and DMR. The last mode is being enjoyed locally through a [DV-Mega-Raspberry PI](#) combination. DCAP meets for breakfast at 7AM nearly every Saturday morning at [Rikki's Family Restaurant](#) in Fairport and everyone is welcome to join us. Talk in is on the KB2VZS analog repeater on 146.715 MHz with a PL of 110.9 Hz.

KEUKA LAKE AMATEUR RADIO ASSOCIATION, KLARA

The purpose of our association is to:

- promote interest in Amateur Radio communication and advancement of the radio art.
- conduct programs, training, and exercises that enhance the skills of the members, and educate the community.
- develop ties with other services and establish relationships with community organizations.
- provide emergency communication services.
- promote enjoyable Amateur Radio related events.

The association was incorporated in 1991 and has been a vibrant part of the community ever since. We have a very active VE testing program. We also participate in numerous public events (the Wineglass Marathon and the Wine Country Classic Boat Regatta are two of the largest).

We operate a system of three repeaters (which are linked), providing a large area footprint for two meter FM amateur use. Please see our website for details. (www.klara.us)

Our meetings are held on the second Wednesday of each month at the Civil Defense and Fire Training Center on Route 54 in Bath, NY.

SQUAW ISLAND AMATEUR RADIO CLUB, SIARC

The Squaw Island Amateur Radio Club (SIARC) meets every second Wednesday of the month at 7:30PM at the Ontario County Safety Training Facility, 2914 County Road 48, Town of Hopewell. We have License Exam Testing every other month which begins at 6:30PM. The next meeting will be Wednesday, February 13th. There will be license Exams this month. 73's Steve Benton VP SIARC WB2VMR

WESTSIDE AMATEUR RADIO CLUB

The mission of the Westside Amateur Radio Club is to provide emergency communications services to the community, to assist other civic organizations, to promote the technical craft of amateur radio through class training and testing, to mentor new members, and enhance fellowship among radio amateurs.

The Westside Amateur Radio Club meets on the first Tuesday of the month, 7PM, at the Prudential Kares Realty, 3313 Chili Ave., Rochester, NY 14624. Park / enter on the left side of the building and meet in the lobby.

The talk in repeater for all meetings is the WR2AHL Repeater 146.760MHz - 110.9. AllStar, Echolink, and web streaming connections are available.

Website: <http://WestsideAmateurRadio.club>

INTERLOCK ROCHESTER - K2HAX - ROCHESTER'S HACKERSPACE

Interlock Rochester is open most every Tuesday night at 7pm. We're in the Hungerford Building (1115 East Main Street, Rochester NY), just north of Village Gate. Come to Door #7 (to the left of Comics Etc) and buzz Suite 200. Want to know more? Visit our website at <http://www.interlockroc.org/>, contact us at info@interlockroc.org, or find us in #interlock on Freenode IRC.

ROCHESTER MAKERSPACE

The Rochester Makerspace is located at the rear of 850 St. Paul Street in almost 4,000 square feet of workspace. We are a volunteer-run 501c(3) nonprofit organization and our mission is to encourage learning, creativity and collaboration. We do that by providing low-cost and free access to sophisticated tools, offering a wide variety of classes, and by providing opportunities for "makers," artists and crafts persons of all kinds to meet and learn from each other.

Drop in to explore, learn and make at our weekly open house:
Every Thursday Night, 6 to 10 PM – Weekly Community Night & Open House
Every Saturday, 11 AM to 3 PM – Weekly Community & Open House
Park in the lot at Scrantom St. and Conkey Ave. and follow the signs.

A ham bench is set up with a 2 meter FM radio and a laptop with WebSDR. Waiting for nicer weather to install outside antennas for the Heathkit HW101 transceiver and Kenwood all mode 2 meter transceiver. Donations of ham equipment accepted.

For more information visit <https://www.makerspacerochester.org/hamradio>

GENESEE VALLEY AMATEUR RADIO ASSOCIATION

Email n3dsp@lafireline.net for details.

ASTRONOMY SECTION ROCHESTER ACADEMY OF SCIENCE

For more information visit <http://www.rocheasterastronomy.org/>

THE AMATEUR'S CODE

Originally written by Paul M. Segal, W9EEA (1928)

THE RADIO AMATEUR IS:

CONSIDERATE	Never knowingly operating in such a way as to lessen the pleasure of others.
LOYAL	Offering loyalty, encouragement and support to other amateurs, local club, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.
PROGRESSIVE	With knowledge abreast of science, a well built and efficient station and operation beyond reproach.
FRIENDLY	With slow and patient operation when requested, friendly advice and counsel to the beginner, kindly assistance, co-operation and consideration for the interests of others. These are the hallmarks of the amateur spirit.
BALANCED	Radio is an avocation, never interfering with duties owed to family, job, school or community.
PATRIOTIC	With station and skill always ready for service to country and community.

RARA MARKETPLACE

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Contact us for details at editor@rochesterham.org.

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RARA OFFICERS, DIRECTORS AND COORDINATORS

OFFICERS

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MARCH RAG DEADLINE

FEBRUARY 15, 2018



**RARA meets at 7PM on the
first **Wednesday** of each month. Join
us at:**

Seneca Waterways Council, BSA Headquarters
2320 Brighton Henrietta Town Line Rd
Rochester, New York 14623

Get Directions

Rochester Area Repeater Listing

THE RARA RAG

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P.O. Box 93333, Rochester, NY, 14692-8333
Hotline – (585) 210- 8910
Website – <http://www.rochesterham.org>

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Digital Communications Association of Perinton (DCAP)
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Drumlins Amateur Radio Club Ltd. (DARC)
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Fisherman's Net Amateur Radio Club
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Genesee Valley Amateur Radio Assn.
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Keuka Lake Amateur Radio Association (KLARA)
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Monroe County ARES
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